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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/590,499	08/24/2006	Warren John Smith	608-484	1070

23117 7590 01/14/2008
NIXON & VANDERHYE, PC
901 NORTH GLEBE ROAD, 11TH FLOOR
ARLINGTON, VA 22203

EXAMINER

ZUCKER, PAUL A

ART UNIT	PAPER NUMBER
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1621

MAIL DATE	DELIVERY MODE
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01/14/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/590,499	Applicant(s) SMITH, WARREN JOHN	
	Examiner Paul A. Zucker	Art Unit 1621	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 34-70 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 34-70 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>8/24/06</u> . | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

1. Claim 36 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 36 recites the limitation "20 wt%" in line 2. Claim 36, however, fails to set forth any reaction component is so-limited. It is therefore impossible to determine the metes and bounds of the claimed subject matter and claim 36 is therefore rendered indefinite.
2. Claims 48 and 49 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 48 recites the limitations "silicon carbide, carbons and organic polymers" in line 2. There is insufficient antecedent basis for these limitations in the claims. Claim 48 and its dependents are therefore rendered indefinite.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. Claims 34-40, 42- 47and 50-70 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wegman et al (US 6,521,783 02-2003).

Instantly claimed is a carbonylation process for the production of a carbonylation product by contacting carbon monoxide with a feed comprising an alcohol and/or a reactive derivative thereof in the vapor phase using an heterogeneous heteropolyacid catalyst comprising one or more metal cations selected from Cu, Fe, Ru, Os, Co, Rh, Ir, Ni, Pd and Pt, characterized in that there is also present in the feed at least 0.5wt% water.

Wegman exemplifies (Column 43, line 25- column 44, line 39) a continuous method for the carbonylation of methanol to acetic acid and methyl acetate. Wegman discloses (Column 44, lines 9- 17) the use of an Ir-Pd replaced phosphotungstic acid supported on silica gel as catalyst (50 wt %). Wegman exemplifies (Column 44, lines 20- 24)reaction in a zone maintained at a uniform temperature of about 235°C and a uniform pressure of about 1000 psig with the synthesis gas having a hydrogen to carbon monoxide molar ratio of 1:1. The GHSV of the syngas fed to the reactor was

6000/hr. Wegman teaches (Column 48, line 43-50) the reaction of mixtures of reactive alcohol derivatives including ethers and esters.

The difference between the instantly claimed process and that taught by Wegman is that a certain percentage of water is instantly included in the feed stream while Wegman is silent with regard to such inclusion.

Wegman, however, teaches (Column 4, lines 57- column 5, line 41 and Fig. 1) the direct conversion of syngas to methanol and thence to an equimolar mixture of dimethyl ether and water and its direct use as feed stock in the carbonylation process.

One of ordinary skill in the art would have been motivated to adjust the amount of water employed in the process in an effort to optimize the process. There would have been a reasonable expectation of success based on the fact that Wegman teaches the inclusion of water in the process and the routine nature of process optimization.

Thus the instantly claimed process would have been obvious to one of ordinary skill in the art.

4. Claim 41 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wegman et al (US 6,521,783 02-2003) ('783) as applied to claims 34-40, 42- 47 and 50-70 above, and further in view of Wegman (US 5,21,140-B1 06-1993) ('140).

Instantly claimed is a carbonylation process for the production of a carbonylation product by contacting carbon monoxide with a feed comprising an alcohol and/or a reactive derivative thereof in the vapor phase using an heterogeneous heteropolyacid catalyst comprising rhodium characterized in that there is also present in the feed at least 0.5wt% water.

The difference between the process taught by Wegman '783 and that instantly claimed is that a catalyst containing rhodium is instantly employed while Wegman '783 does not contemplate the use of rhodium.

Wegman '140, however, teaches (Column 3, line 35-column 4, line 24) a similar carbonylation process and further teaches that rhodium may be employed in the catalyst. Wegman exemplifies (Column 8, lines 59-68, Table 1, entry 2) the use of a rhodium-containing phosphotungstic acid.

Thus one of ordinary skill in the art would have been motivated to replace the catalyst of Wegman '783 with that of Wegman '140 based on the teaching of Wegman '140 that it was suitable for the process of Wegman '783. For that reason, there would also have been a reasonable expectation for success.

Thus the instantly claimed process would have been obvious to one of ordinary skill in the art.

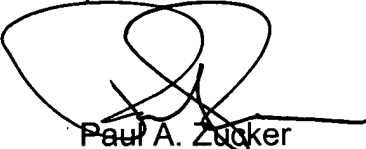
Conclusion

5. Claims 34-70 are pending. Claims 34-70 are rejected.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paul A. Zucker whose telephone number is 571-272-0650. The examiner can normally be reached on Monday-Friday 5:30-3:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Evonne Eyler can be reached on 571-272-0871. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Paul A. Zucker
Primary Examiner
Art Unit 1621